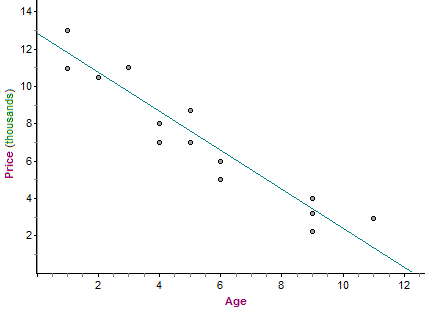
Worksheet 4.2C - ANSWERS

Open the group USEDCAR to get the lists USEDA and USEDB. USEDA is the age of the used Corolla. USEDB is the price listed in the local paper for the car.

1. Create the scatterplot. Describe the association.



Negative

Linear

Strong(r = -0.945)

No outliers

1. Write the LSRL.

y = 12319.59 – 924x

1. What is the correlation?

r = -0.945; Strong

1. What is the slope? Interpret in the context of the problem.

Slope = -924;

For every increase of 1 year in the age of the car there is a decrease in the selling price of $924 dollars on average.

1. If you want to sell a 7-year-old Corolla, what price seems appropriate?

y = 12319.59 – 924(7)

y = $5851.59

1. What is the residual for a car that is 3 years old?

y = 12319.59 – 924(3) e = 10995 – 9547.59

y = $9547.59 e = $1447.41

1. You have the chance to buy one of two cars. They are about the same age and appear to be in equally good condition. Would you rather buy the one with a positive residual or a negative residual?

You want the one with the negative residual because the actual price is less than you would expect. So it’s cheaper.

1. Would this regression model be useful in establishing a fair price for a 20-year-old car?

No. 20 years is too far out of the range of the data.

1. What is R2? What does this mean in the context of the problem?

R2 = 89.4%

89.4% of the change in selling price is due to the change in the age of the car.

1. What percent of the variability in price is not being explained by the linear model?

10.6% of the variability in selling price is due to other factors.

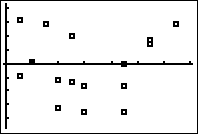
1. What other factors may be contributing to the change in price?

Condition of the car.

Model

Etc.

1. Create and sketch the residual plot



1. Does the linear model seem an appropriate one?

Yes.

* The original scatterplot of AGE vs. PRICE was fairly linear
* The correlation is very strong (-0.945)
* There is no obvious curve in the residual plot so the linear model is appropriate.